CONTENTS

Special Issue: High-temperature Superconductors — A Collection of Invited Papers on Thermal Analysis, Calorimetry and Crystal Chemistry of High-temperature Oxide Superconductors

Preface ix

Oxide superconductors
A.W. Sleight (Corvallis, OR, U.S.A.) 1

Structural properties and thermochemical reactivity of superconducting mixed copper oxide phases
A. Reller and S. Casagrande (Zürich, Switzerland) 9

Thermodynamics of high-T_c superconductors
V.B. Lazarev, K.S. Gavrichev, V.E. Gorbunov, J.H. Greenberg, P.Z. Slutskii, Ju.G. Nadtochii and I.S. Shaplygin (Moscow, U.S.S.R.) 27

The effect of chemical substitution on superconductivity in the $YBa_2Cu_3O_7$
I. Felner (Jerusalem, Israel) 41

Intercalation of halogens into the lattice of $YBa_2Cu_3O_{7-x}$ phases and substitution of halogens for oxygen atoms
A.G. Klimenko and V.Ye. Fedorov (Novosibirsk, U.S.S.R.) 71

Oxidation–reduction and other gas–solid reactions of high-T_c superconductors
P.K. Gallagher (Columbus, OH, U.S.A.) 85

Charge distribution, pressure and composition effects of CuO_x based superconductors
J. Šesták, J. Kamarád, P. Holba, A. Tříska, E. Pollert and M. Nevřiva (Prague, Czechoslovakia) 99

Phase diagrams and crystal growth of oxide superconductors
H.J. Scheel (Lausanne, Switzerland) and F. Licci (Parma, Italy) 115

High-T_c superconducting glass-ceramics
T. Komatsu and K. Matusita (Nagaoka, Japan) 131

Thermoanalytical observations on synthesis of oxide superconductors
M. Kamimoto (Ibaraki, Japan) 153

Chemical processing of the high-temperature superconductor $Ba_2YCu_3O_{7-\delta}$ through solution routes and thermal behaviour on pyrolysis
S.-I. Hirano and T. Hayashi (Nagoya, Japan) 169

Volatility of metal β-diketonates for chemical vapor deposition of oxide superconductors
T. Ozawa (Ibaraki, Japan) 185

Thermal behavior of the Chevrel phase sulfides
T. Uchida and M. Wakihara (Tokyo, Japan) 201

Sintering and expansion of HTSC ceramics
H.M. O'Bryan (Murray Hill, NJ, U.S.A.) 223

Forming methods for high T_c superconductors
G.S. Grader and D.W. Johnson, Jr. (Murray Hill, NJ, U.S.A.) 239

On continuous oxide superconductor wire preparation by melt fast solidification and glass formation
Z. Strnad and J. Šesták (Prague, Czechoslovakia) 253

Epitaxially grown cuprate superconductor films and further attempts at their design
M. Kawai (Yokohama, Japan) 269

Heat capacities of high-T_c oxide superconductors
T. Atake (Yokohama, Japan) 281

Low frequency magnetic measurements on high-T_c superconducting materials
F. Gömöry (Bratislava, Czechoslovakia) 299

Author Index 321

Subject Index 323